ABSTRACT

Purpose: To evaluate the immunohistochemical expression of TGFβ1 and E-cadherin in OSMF with and without malignant transformation and to determine its usefulness to predict malignant transformation.

Material and Methods: A total of 30 OSMF cases were included along with six additional archival samples to represent **(non-OSMF)** for immunohistochemical staining**.** The OSMF cases were categorized into 3-groups on the basis of clinical presence or absence of premalignant and malignant features supported by the microscopic evidence of normal epithelium as OSMF **(Group I),** epithelial dysplasia as OSMF **(Group II)** and carcinoma-in-situ and squamous cell carcinoma as OSMF **(Group III).**

Results: All 30 OSMF and 6 non-OSMF cases exhibited TGFβ1 and E-cadherin staining reaction. The TGFβ1 showed moderate to intense nuclear and cytoplasmic staining pattern with the latter pattern restricted to OSMF **(Group II and III).** There was positive correlation (Kendall's tau-b-0.250) between TGFβ1 intensity and cytoplasmic E-cadherin staining reaction in the spinous cell layers of OSMF **(Group II) and III)** even in the adjacent normal epithelium. There was a gradual decline of membranous E-cadherin staining reaction from OSMF Group II to III with reduction of both membranous and cytoplasmic pattern in the invasive front followed gain of both patterns in the invasive nests. No statistical significance was observed with any histological variables between OSMF Groups except for basement membrane thickening in Group I (p=0.027).

Conclusion: The observed cytoplasmic staining pattern with E-cadherin in the spinous cell layers close to and away from the focus of epithelial dysplasia, carcinoma-in-situ and invasive squamous cell carcinoma may well predict the potential for malignant transformation of OSMF in the appropriate clinical context.

Key Words: Immunohistochemistry, TGFβ1, E-cadherin, OSMF, submucous fibrosis, epithelial dysplasia, carcinoma, and oral epithelium.